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| 10/695,979      | 10/29/2003  | Raimo Bakis          | YOR920030379US1     | 8009             |

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| EXAMINER |
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GODBOLD, DOUGLAS

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2626

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/695,979

Applicant(s)

BAKIS ET AL.

Examiner

Douglas C. Godbold

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20031029</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to application 10/695,979 filed on October 29, 2003. Claims 1-33 are pending in the application and have been examined.

#### ***Information Disclosure Statement***

2. The Information Disclosure Statement filed on October 29, 2003 has been considered in this application.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Henton (US Patent 5,860,064).

5. Consider claim 1, Henton teaches a method (figure 5), comprising:  
identifying text to convert to speech (select text, step 501);  
selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics (Choose vocal emotion for selected text; step 503);

marking said text to associate said text with said selected speech style sheet (figures 2-4 show marking text with colors, size, and boldface in order to associate text with a speech style); and

converting said text to speech having said desired speech characteristics by applying a low level markup generated by said speech style sheet (Look up synthesizer values for chosen emotion in emotion table [table 2], step 505. Apply speech synthesizer vocal emotion values to the chosen text, step 507.).

6. Consider claim 2, Henton teaches a method according to claim 1, further comprising:

sending said text with said low level markup to an output device (Obtained vocal parameters will be outputted by the text to speech system; column 4, line 45. Values shown in Table 2 are input to the speech synthesizer, Column 10, line 42.).

7. Consider claim 3, Henton teaches a method according to claim 1, further comprising:

identifying at least one low level markup (columns of Table 2);

defining a voice style at least in part by associating said voice style with said at least one low level markup (Table 2 gives examples of the defined emotions of the preferred embodiment of the present invention with their associated vocal emotion values; column 9, line 56.); and

associating a speech style sheet with said voice style (Figure 1, device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. Applicant defines the speech style sheet as a database; page 11, line 16. Therefore Henton teaches a style sheet.).

8. Consider claim 4, Henton teaches a method according to claim 3, wherein said associating said speech style sheet with said voice style includes:

creating said speech style sheet (As such, note that the particular values shown are easily modifiable, by the system implementer and/or the user, to thus allow for differences in cultural interpretations and user/listener perceptions; column 9, line 61. If parameters are modifiable, one could easily create emotional styles.).

9. Consider claim 5, Henton teaches a method according to claim 3, wherein said associating said speech style sheet with said voice style includes:

editing said speech style sheet (As such, note that the particular values shown are easily modifiable, by the system implementer and/or the user, to thus allow for differences in cultural interpretations and user/listener perceptions; column 9, line 61.).

10. Consider claim 6, Henton teaches a method according to claim 1, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule (Table 2 gives examples of the defined emotions of the preferred embodiment of the

present invention with their associated vocal emotion values; column 9, line 56. Table 2, shows pitch mean, range, volume, and speaking rate.).

11. Consider claim 7, Henton teaches a method according to claim 1, further comprising:

providing said speech style sheet to at least one of a text-to-speech developer and a text-to-speech device (As such, note that the particular values shown are easily modifiable, by the system implementer and/or the user, to thus allow for differences in cultural interpretations and user/listener perceptions; column 9, line 61. Style sheets must be presented to a developer to be modified. Obtained vocal parameters will be outputted by the text to speech system; column 4, line 45. Values shown in Table 2 are input to the speech synthesizer, Column 10, line 42.).

12. Consider claim 8, Henton teaches a method according to claim 1, further comprising:

compiling a library of speech style sheets. (Figure 1, device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. The vocal parameters associated with an emotion was inherently programmed into memory.)

13. Consider claim 9, Henton teaches a method according to claim 1, further comprising:

identifying at least one low level markup (column 11 lines 28-35 show text marked up with low level parameters.);

associating a speech style sheet with said at least one low level markup (Column 11 lines 28-35 show text marked up with low level parameters that were a result of applying different vocal emotions [from table 2] to different portions of text; column 11, line 1.).

14. Consider claim 10, Henton teaches a method according to claim 1, wherein said speech style sheet is selected from a menu of available speech style sheets (Figure 2 shows at the top a menu of emotions.).

15. Consider claim 11, Henton teaches a method according to claim 1, wherein said marking of said text includes annotating said text with an annotation such as underlining, bolding, italicizing, highlighting, color-coding, coding, adding a symbol, a mark, or a design (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; column 9, line 7.).

16. Consider claim 12, Henton teaches a method according to claim 1, wherein said converting said text to speech includes:

identifying said low level markup associated with said speech style sheet  
(Column 11 lines 28-35 show text marked up with low level parameters that were a

result of applying different vocal emotions [from table 2] to different portions of text; column 11, line 1.); and

converting said marking of said text to said low level markup (Figures 2-4, text is marked using color codes to determine an emotion; described in detail column 7 line 60-column 9 line 11. Figure 5, Look up synthesizer values for chosen emotion in emotion table [table 2], step 505. Apply speech synthesizer vocal emotion values to the chosen text, step 507. Final marked up text with emotion values shown in column 11, line 28-35.).

17. Consider claim 13, Henton teaches a method according to claim 1, wherein said marking of said text further associates said text with a voice style associated with said speech style sheet (Figures 2-4, text is marked using color codes to determine an emotion; described in detail column 7 line 60-column 9 line 11. Emotions and parameters are shown in table 2.).

18. Consider claim 14, Henton teaches a method according to claim 13, wherein said voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category (Henton teaches a method for automatic application of vocal emotion parameters, abstract.).

19. Consider claim 15, Henton teaches a method according to claim 1, wherein said low level markup allows a text-to-speech developer to convey a certain amount of



information using less text. (Column 11 lines 28-35 show text marked up with low level parameters that were a result of applying different vocal emotions [from table 2] to different portions of text; column 11, line 1. These low level parameters convey information using text to the synthesizer.)

20. Consider claim 16, Henton teaches a method according to claim 1, wherein said selecting is performed by a text-to-speech developer not having expertise in voice arts (What is needed, therefore, is an intuitive graphical interface for specification and modification of vocal emotion of synthetic speech; column 2, line 36. Further, the present invention provides for the automatic specification of prosodic controls which create vocal emotional affect in synthetic speech produced with a concatenative speech synthesizer, column 2, line 64.).

21. Consider claim 17, Henton teaches a speech style sheet (Figure 1, device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. Applicant defines the speech style sheet as a database; page 11, line 16. Therefore Henton teaches a style sheet.), comprising:

at least one voice style associated with at least one voice-type, said at least one voice style relating a high level markup of said voice-type to a low level markup of said voice-type (Device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. Associations are shown in table 2. Figures

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2-4 show marking up text using color coding, bolding, and font size to associate emotions with text for emotions; column 9, line 7.).

22. Consider claim 18, Henton teaches the speech style sheet according to claim 17, wherein said high level markup of said voice-type is a text markup (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.).

23. Consider claim 19, Henton teaches the speech style sheet according to claim 17, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.).

24. Consider claim 20, Henton teaches the speech style sheet according to claim 17, wherein said low level markup of said voice-type includes code causing generation of speech having particular speech properties (Column 11 lines 28-35 show text marked up with low level parameters that were a result of applying different vocal emotions [from table 2] to different portions of text; column 11, line 1. Values shown in Table 2 are input to the speech synthesizer, Column 10, line 42.).

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25. Consider claim 21, Henton teaches the speech style sheet according to claim 17, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, speed, an intonation, a timing, a volume, and a pronunciation rule (Table 2 gives examples of the defined emotions of the preferred embodiment of the present invention with their associated vocal emotion values; column 9, line 56. Table 2, shows pitch mean, range, volume, and speaking rate.).

26. Consider claim 22, Henton teaches the speech style sheet according to claim 17, wherein said at least one voice style represents style characteristics such as an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category (Henton teaches a method for automatic application of vocal emotion parameters, abstract.).

27. Consider claim 23, Henton teaches the speech style sheet according to claim 17, wherein said speech style sheet is at least one of a programming object, a programming module, a computer program, or a computer file (Figure 1, device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. The parameters must be saved in a computer file or program object to be stored by memory.).

28. Consider claim 24, Henton teaches an apparatus (figure 1), comprising:

a processor having access to at least one speech style sheet (CPU 11, connected to memory 17. Memory holds vocal emotion parameters associated with emotions; column 4, line 54.), said at least one speech style sheet containing a definition of a voice style associated with a voice-type, and said definition relating a high level markup of said voice-type to a low level markup of said voice-type (Device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. Associations are shown in table 2. Figures 2-4 show marking up text using color coding, bolding, and font size to associate emotions with text for emotions; column 9, line 7.), wherein said processor is operative to convert said high level markup to said low level markup (Look up synthesizer values for chosen emotion in emotion table [table 2], step 505. Apply speech synthesizer vocal emotion values to the chosen text, step 507.);

a user interface device for applying said at least one voice style to text associated with said voice-type, said user interface being in communication with said processor (Figure 1, a keyboard 13, or other textual input device such as a write-on tablet or touch screen, provides input to the CPU/memory unit 11, as does input controller 15 which by way of example can be a mouse, a 2-D trackball, a joystick, etc.; column 5, line 22.); and

an output device connected to said processor for converting said text with said low level markup to speech (figure 1, output 21. Values shown in Table 2 are input to the speech synthesizer, Column 10, line 42.).

29. Consider claim 25, Henton teaches the apparatus of claim 24, wherein said processor includes at least one of a text-to-speech engine (The preferred manner in which this invention would be implemented is in the context of creating vocal emotions that may be associated with text that is to be read by a text-to-speech synthesizer; column 9, line 15.) and a text normalizer (a simple linear normalization is then performed in the preferred embodiment of the present invention in order to translate the graphical modifications to the resulting vocal emotion effect; column 9, line 38).

30. Consider claim 26, Henton teaches the apparatus according to claim 24, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule (Table 2 gives examples of the defined emotions of the preferred embodiment of the present invention with their associated vocal emotion values; column 9, line 56. Table 2, shows pitch mean, range, volume, and speaking rate.).

31. Consider claim 27, Henton teaches the apparatus according to claim 24, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.).

32. Consider claim 28, Henton teaches the apparatus according to claim 24, wherein said voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category (Henton teaches a method for automatic application of vocal emotion parameters, abstract.).

33. Consider claim 29, Henton teaches a system (Figure 1), comprising:

a designer device for creating speech style sheets (As such, note that the particular values shown are easily modifiable, by the system implementer and/or the user, to thus allow for differences in cultural interpretations and user/listener perceptions; column 9, line 61. If parameters are modifiable, one could easily create emotional styles.);

a speech style sheet at least partially created by said designer device, said speech style sheet defining a voice style (Figure 1, device contains a memory for holding said vocal emotions parameters associated with emotions, column 4, line 54. Applicant defines the speech style sheet as a database; page 11, line 16. Therefore Henton teaches a style sheet.);

a text-to-speech device for receiving text associated with a voice-type (The preferred manner in which this invention would be implemented is in the context of creating vocal emotions that may be associated with text that is to be read by a text-to-speech synthesizer; column 9, line 15.), said text having a high level markup associated with said voice style (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.), said text-to-speech

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device having access to said speech style sheet (CPU 11, connected to memory 17.

Memory holds vocal emotion parameters associated with emotions; column 4, line 54.)

and also having:

a memory for storing computer executable code (figure 1, memory 17);

and

a processor for executing the program code stored in memory (CPU 11),

wherein the program code includes;

code to determine, by accessing said speech style sheet, a low level markup associated with said high level markup (Figure 5, Look up synthesizer values for chosen emotion in emotion table [table 2], step 505.); and

code to convert said high level markup of said text to said low level markup (Apply speech synthesizer vocal emotion values to the chosen text, step 507.); and

an output device for producing expressive speech using said text with said low level markup, said output device in communication with said text-to-speech device (figure 1, output 21. Values shown in Table 2 are input to the speech synthesizer, Column 10, line 42.)

34. Consider claim 30, Henton teaches the system according to claim 29, further comprising:

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a developer device in communication with said text-to-speech device (Figure 1, a keyboard 13, or other textual input device such as a write-on tablet or touch screen, provides input to the CPU/memory unit 11, as does input controller 15 which by way of example can be a mouse, a 2-D trackball, a joystick, etc.; column 5, line 22.), said developer device for marking text and providing said text to said text-to-speech device (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.).

35. Consider claim 31, Henton teaches the system according to claim 29, further comprising:

a user interface device in communication with said text-to-speech device (Figure 1, a keyboard 13, or other textual input device such as a write-on tablet or touch screen, provides input to the CPU/memory unit 11, as does input controller 15 which by way of example can be a mouse, a 2-D trackball, a joystick, etc.; column 5, line 22.), said user interface device for applying high level markup to text and providing said text to said text-to-speech device (Figures 2-4 show marking up text using color coding, bolding, and font size changes for emotions; columns 7 line 61 - 9, line 11.).

36. Consider claim 32, Henton teaches an article of manufacture (figure 1), comprising:

a computer usable medium having computer readable program code means embodied therein for producing expressive text-to-speech (External storage 17, which



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can include fixed disk drives, floppy disk drives, memory cards, etc., is used for mass storage of programs and data; column 5, line 26. Method, figure 5.), comprising:

computer readable program code means for identifying text to convert to speech (select text, step 501);

computer readable program code means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics (Choose vocal emotion for selected text; step 503);

computer readable program code means for marking said text to associate said text with said selected speech style sheet (figures 2-4 show marking text with colors, size, and boldface in order to associate text with a speech style); and

computer readable program code means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet (Look up synthesizer values for chosen emotion in emotion table [table 2], step 505. Apply speech synthesizer vocal emotion values to the chosen text, step 507.).

37. Consider claim 33, Henton teaches a system for producing expressive text-to-speech, (system figure 1, Method figure 5), comprising:

means for identifying text to convert to speech (select text, step 501);

means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics (Choose vocal emotion for selected text; step 503);

means for marking said text to associate said text with said selected speech style sheet (figures 2-4 show marking text with colors, size, and boldface in order to associate text with a speech style); and

means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet (Look up synthesizer values for chosen emotion in emotion table [table 2], step 505. Apply speech synthesizer vocal emotion values to the chosen text, step 507.).

### ***Conclusion***

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is included on the notice or references cited (PTO-892).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas C. Godbold whose telephone number is (571) 270-1451. The examiner can normally be reached on Monday-Thursday 7:00am-4:30pm Friday 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DCG

  
**PATRICK N. EDOUARD**  
SUPERVISORY PATENT EXAMINER